



North Carolina Department of Environment and Natural Resources

Division of Air Quality

Carbon tetrachloride

CAS 56-23-5

Current North Carolina AAL = 6.7×10^{-3} mg/m³ (annual carcinogen)

AAL Documentation

$$\text{Inhalation Unit Risk}^1 \text{ (IUR)} = 1.5 \times 10^{-5} \text{ per } \mu\text{g}/\text{m}^3$$

The Inhalation Unit Risk Factor was divided by 10 to compensate for animal to human extrapolation.

$$\text{Modified IUR} = \frac{1.5 \times 10^{-5}}{10} = 1.5 \times 10^{-6} \text{ per } \mu\text{g}/\text{m}^3$$

Carbon tetrachloride is classified as a probable human carcinogen by EPA, Group B2. In accordance with North Carolina guidelines, a 1 in 100,000 risk estimate was used to derive the AAL.

$$\text{Linear Calculation} \quad \frac{1}{1.5 \times 10^{-6} \text{ per } \mu\text{g}/\text{m}^3} = \frac{x}{1 \times 10^{-5}}$$

$$x = \frac{1 \times 10^{-5}}{1.5 \times 10^{-6}}$$

$$x = 6.7 \times 10^0 \mu\text{g}/\text{m}^3$$

$$\text{AAL for Carbon tetrachloride}^2 = 6.7 \times 10^{-3} \text{ mg}/\text{m}^3$$

This information has been reconstructed using the decision matrix established by the North Carolina Academy of Sciences Air Toxics Panel, September, 1986.

Final version – June 2013 (CMP)

¹ EPA Hazard Assessment Document (HAD), 1984. EPA-600/8-82-001F. The Inhalation Unit Risk (IUR) for carbon tetrachloride was estimated from four animal feeding studies using route-to-route extrapolations. The IUR was estimated as $1.5 \times 10^{-5} (\mu\text{g}/\text{m}^3\text{-day})^{-1}$ using standard conversion assumptions of 20 m³ daily breathing rate and 70 kg average body weight.

² $1 \mu\text{g}/\text{m}^3 = 10^{-3} \text{ mg}/\text{m}^3$